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EXAMINER

BISSETT, MELANIE D

ART UNIT PAPER NUMBER

1711

DATE MAILED: 09/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/029,860

Applicant(s)

DAVIS ET AL.

Examiner

Melanie D. Bissett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 10 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 1-50 and 52-68 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 9-33, 63-65, 67 and 68 is/are allowed.
- 6) ☐ Claim(s) 1-8, 34-50, 52-58, 60-62 is/are rejected.
- 7) ☐ Claim(s) 59 and 66 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. The rejections based on 35 USC 112 have been withdrawn; however, new rejections based on 35 USC 112 have been added as necessitated by amendment.

Also, the rejections based on 35 USC 103 have been modified to apply to the amended claims.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-8 and 34-49 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Amended claim 1 recites the components gel in less than about 30 seconds. However, the specification gives no guidance for gel times greater than 13 seconds (example 1). Thus, because a range of "less than 30 seconds" is never suggested or indicated in the specification, the amendment includes new matter. Also, claim 34 has been amended to specify a cure without heating. The specification gives no guidance to avoid heating when curing the compositions. Thus, the negative limitation adds new matter.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 49, 55, 56, 59, and 66 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. Claim 49 recites the limitation "said amine terminated chain extenders" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.
7. Claim 55 recites the limitation "the isocyanate quasi-prepolymer" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.
8. Claim 56 recites the limitation "the isocyanate quasi-prepolymer" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.
9. Claim 59 recites the limitation "said amine-terminated polyether resins" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.
10. Claim 66 recites the limitation "the composition of claim 64" in line 1. There is insufficient antecedent basis for this limitation in the claim. Claim 64 is drawn to a method and not a composition.

***Claim Rejections - 35 USC § 103***

11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
12. Claims 34, 36-37, 39, 42-46, 48-50, 52-53, 55-58, and 60-62 rejected under 35 U.S.C. 103(a) as being unpatentable over Bock et al.
13. From a prior Office action:

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Bock discloses curable polyurethane coating compositions comprising a polyisocyanate and a mixture of isocyanate-reactive compounds including a polyether polyamine and a polyether polyol (abstract). Examples show an isocyanate prepolymer mixed with a polyether polyol, a polyester polyol, Jeffamine T-5000 (a polyoxypropylene ether triamine having a molecular weight of 5000 and an equivalent weight of 1667), fillers, and pigments at an isocyanate index of 1.25:1. The resulting composition is applied to a sheet metal substrate. The isocyanate prepolymer is a reaction product of 2,4-tolylene diisocyanate (an aromatic diisocyanate) and a polyoxypropylene ether diol having a molecular weight of 2000. Bock notes the use of chain extenders, preferring the use of diamine compounds such as 3,5-diethyl-2,4- and/or -2,6-diaminotoluene (col. 7 lines 7-51). These compounds are equivalent to the applicant's claimed 1-methyl-3,5-diethyl-2,4- or -2,6-diaminobenzene. The reference does not specify a preference for the addition of a phenolic resin. However, Bock does note that phenol formaldehyde resins are suitable for use as component B2ii), a polyether polyol having 2-8 hydroxyl groups (col. 6 lines 18-54). The coatings of Bock's invention are shown to have improved low viscosity, long-term flexibility, overbaking resistance, adhesion to electrocoated sheet metal, and shelf life (col. 1 lines 7-15). Because Bock notes the use of phenol formaldehyde resins in the present invention, it is the examiner's position that it would have been prima facie obvious to use phenol formaldehyde in the exemplified coating compositions as the polyether component in the expectancy of a coating having equally improved low viscosity, long-term flexibility, overbaking resistance, adhesion to electrocoated sheet metal, and shelf life.

14. Regarding the claims limiting isocyanates used in the prepolymer, Bock teaches the use of diphenylmethane diisocyanates and aliphatic diisocyanates (col. 2 line 45-col. 3 line 40), where the isocyanates are stabilized with active hydrogen-containing materials before reaction with component B) (col. 3 line 41-col. 5 line 20), thus reacting and forming quasi-prepolymers.

15. Regarding claims limiting a method to one reacting an isocyanate with a blend of active amine hydrogen-containing material, phenolic resin, and a hydroxyl-terminated polyether chain extender, it is noted that Bock teaches the use of hydroxyl-terminated polyether chain extenders such as triethylene glycol, tetraethylene glycol, etc. Thus, the hydroxyl-terminated polyether chain extender limitation is anticipated.

16. Regarding claims limiting the reaction to take place in the absence of catalyst, it is noted that the reference exemplifies the use of catalysts but lists catalysts as

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common additives that may optionally be employed (col. 7 lines 65-67). Therefore, the reference encompasses the reaction of the materials in absence of catalyst.

17. Claim 61 is a product-by-process claim drawn to a coated substrate, where the process of applying the coating includes using high temperature, high pressure, plural component spray equipment to impingement mix the first and second components and spraying the mixture onto a substrate. The reference teaches a coating having a viscosity low enough to allow brushing and spraying onto a substrate (col. 1 lines 7-14). The components are mixed before application (examples). It is the examiner's position that the coated substrates from either method would be indistinguishable, since both methods result in a substrate coated with a low-viscosity composition having identical mixed and curable components.

18. Note that claims 34 and 50 have been amended to limit the curing method or cure time needed to form the coating. These limitations present a product-by-process format for the claims. It is the examiner's position that the cure method or cure time would have no effect on the material structure of the coated substrate or coating composition, since the prior art also teaches curing the coating compositions. Thus, the limitations to cure methods provide no patentable distinction over Bock et al.

19. Claims 38 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bock et al. in view of Primeaux, II.

20. From a prior Office action:

Bock applies as above, noting the use of amine-terminated chain extenders having functionalities of 2-6 and molecular weights of 62-399 but failing to mention the use of polyether

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chain extenders. Primeaux, II teaches polyurea elastomer coatings made by reacting an isocyanate quasi-prepolymer with an amine-terminated polyether polyol and a chain extender, where amine-terminated polyether chain extenders are preferred to yield coatings having good cure and spray processing characteristics as well as improved flexibility and ultraviolet stability (col. 4 lines 16-56). The chain extenders have molecular weights of less than about 400 and functionalities of 2-6. It is the examiner's position that it would have been prima facie obvious to include amine-terminated polyether chain extenders in Bock's invention to improve cure, spray processing, flexibility, and UV stability.

Also, Bock applies as above, noting the use of long-chain polyether polyol-modified isocyanate prepolymers, encompassing trifunctional polyols (col. 3 lines 29-40; examples) but failing to exemplify a prepolymer resulting from a trihydric initiator. Primeaux serves to show the conventionality of employing a polyether polyol based on trihydric initiators and having a molecular weight above about 4000 in isocyanate-terminated prepolymer production (col. 3 lines 8-20). Since Bock's invention generally encompasses trifunctional polyether polyols, it is the examiner's position that it would have been prima facie obvious to choose trifunctional polyether polyols having high molecular weights in the expectancy of forming a coating having equally improved low viscosity, long-term flexibility, overbaking resistance, adhesion to electrocoated sheet metal, and shelf life.

21. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bock et al. in view of Finelli.

22. From a prior Office action:

Bock applies as above, failing to mention the addition of epoxy resins to the coating compositions. Finelli discloses compositions made by preparing an isocyanate-terminated prepolymer by reacting an isocyanate with a hydrogen-containing polymeric material and curing a mixture containing the prepolymer and an epoxy resin (col. 1 line 65-col. 2 line 3). Suitable curing agents include glycol or diamine chain extenders (col. 4 lines 1-30). The resulting compositions have improved water resistance due to the addition of the epoxy resin (col. 1 lines 25-54; col. 2 lines 4-7). Therefore, it is the examiner's position that it would have been prima facie obvious to include an epoxy resin with the prepolymer component of Bock's invention to improve the water resistance of the resulting coating.

***Allowable Subject Matter***

23. Claims 9-33, 63-65, and 67-68 are allowed.

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24. Claim 66 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

25. Claim 59 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.



### ***Response to Arguments***

26. Regarding the applicant's argument that Bock does not teach the curing of the components without heating, it is the examiner's position that, since claim 34 is drawn to a copolymer composition, the avoidance of a heat cure step does not provide a patentable difference over Bock et al. Bock teaches curing the components to form a coating, and it is the examiner's position that this cured coating would have no material difference from a coating cured without the use of heat.

27. Likewise, regarding claim 50, a coating formed from two components mixed just prior to application to the substrate would have the same structure as one formed from a one-component system which is heat-cured. Thus, it is the examiner's position that the process limitations added to claim 50 do not provide a patentable difference over the prior art. Regarding the argument that one-component systems require the use of a catalyst, heat, or moisture, it is noted that the claims do not exclude the use of additional components.

### ***Conclusion***

28. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (703) 308-6539. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (703) 308-2462. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

mdb